

Attorney's Docket No.: 06618-590001/CIT- 3165

REMARKS

Claims 1-5, 9, and 10 are pending. Claims 1-5, 9, and 10 are under consideration. Claims 6-8 have been withdrawn from consideration. Claims 1 and 5 have been amended.

In the action mailed May 31, 2005, claims 1-5, 9, and 10 were rejected under 35 U.S.C § 102(b) as anticipated by U.S. Patent No. 5,092,036 to Hu et al. (hereinafter "Hu"). Claims 1-5, 9, and 10 were also rejected under 35 U.S.C. § 103(a) as obvious over Hu.

The rejection makes a number of contentions as to why Hu anticipates claims 1-5, 9, and 10 and/or renders claims 1-5, 9, and 10 obvious.

Contention 1: In regard to independent claims 1 and 5, the rejection contends that 115 microns is "about 100 microns." Please note that this contention is not applicable to independent claim 4 (which relates to indium bumps having a height ranging from 15 to 100 $\mu$ m) and dependent claim 2 (which relates to indium bumps have a height of between 20 to about 70 $\mu$ m).

Applicant respectfully submits that 115 microns is not "about 100 microns." However, to advance prosecution and address the Examiner's concerns, claim 1 has been amended to relate to indium bumps having a height of between 15 to 100 $\mu$ m,

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and claim 5 has been amended to relate to a hybrid detector where surfaces of a pixilated detector and a VLSI chip are separated by 15 to 100 $\mu$ m.

Applicant respectfully submits that Hu's 115 micron indium columns neither describe nor suggest such indium bumps or such a hybrid detector, and therefore that claims 1 and 5 are allowable over Hu.

Contention 2: The rejection also contends that "there is some argument from the specification that up to 200 microns is about right."

Applicant submits that the plain language of the claims clearly excludes indium bumps having a height of 200 microns. This is emphasized by the claims, which are amended to remove the word "about." Additional implementations in the specification expressly outside of the scope of the claims cannot be used as a basis to reject the claims.

Contention 3: The rejection also contends that smaller indium bumps than those disclosed in Hu are anticipated and/or obvious in light of Hu's teachings as to how larger indium bumps are formed. This contention is based on the proposition that larger indium bumps are more desirable than smaller indium bumps.

Even if it is true that larger indium bumps are more desirable than smaller indium bumps, this contention neglects

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the principle that non-enabling prior art cannot serve as the basis of a prior art rejection.

"Prior art under § 102(b) must sufficiently describe a claimed invention to have placed the public in possession of that invention.' *In re Donohue*, 766 F.2d 531, 533 (Fed. Cir. 1985); *In re Samour*, 571 F.2d 559, 562 (CCPA 1978). The proper test of a publication as a § 102(b) bar is "whether one skilled in the art to which the invention pertains could take the description of the invention in the printed publication and combine it with his own knowledge of the particular art and from this combination be put in possession of the invention on which a patent is sought." *LeGrice*, 301 F.2d at 939. In particular, one must be able to make the claimed invention without undue experimentation."

*In re Elsner*, 381 F.3d 1125, 1129 (Fed. Cir. 2004) (en banc).

Here, Hu does not describe or suggest how to make indium bumps that have a height of between 15 to 100 $\mu$ m. In other words, the claimed invention has not been placed in the possession of the public.

There is no reason to believe that one skilled in the art would be able to make the claimed invention without undue experimentation. For example, Hu describes that 115  $\mu$ m long metal tubes which traverse a 75  $\mu$ m thick, high performance polymer film are to be completely filled with molten indium by capillary action. There is no reason to believe that shorter capillary tubes are suggested to one skilled in the art without undue experimentation. There is no reason to believe that

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thinner high performance polymer film is available to one skilled in the art without undue experimentation. There is no reason to believe that such shorter tubes are amenable to immobilization in such a thinner high performance polymer film without undue experimentation. Further, there is no reason to believe that such a high performance polymer film would be able to withstand contact with molten indium as required by Hu.

It is well-established that the burden of establishing either anticipation or a *prima facie* case of obviousness rests on the Patent Office. Mere speculation is not sufficient to meet this burden. Under the standard of non-obviousness that has been applied since *Graham* in 1966, subjective feelings regarding the desirability of an invention are irrelevant as to whether inventions are patentable. *Graham et al. v. John Deere Co. of Kansas City et al.*, 383 U.S. 1 (1966). Rather, the burden must be met by reliance on the scope and content of the prior art, and on the level of skill in the art.

Since the rejection has not established that Hu enables one skilled in the art to make the claimed subject matter, any rejection under 35 U.S.C. § 102 or 35 U.S.C. § 103(a) that relies exclusively on Hu is improper.

Contention 4: The rejection also contends that larger diameter indium bumps than are disclosed in Hu are anticipated and/or obvious in light of Hu's teachings as to how smaller

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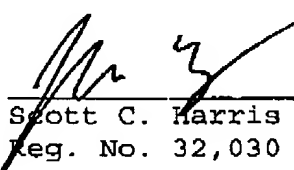
diameter indium bumps are formed. This contention is based on the proposition that smaller diameter indium bumps are more desirable than larger diameter indium bumps.

As discussed in regard to Contention 3 above, non-enabling prior art cannot serve as the exclusive basis of a prior art rejection. In particular, the burden of proof lies with the USPTO to show that the claimed inventions have been placed in the possession of the public. Here, there is no reason to believe that one skilled in the art would be able to make indium bumps having the claimed diameters without undue experimentation. Therefore, any rejection under 35 U.S.C. § 102 or 35 U.S.C. § 103(a) that relies exclusively on Hu is improper.

Applicant asks that all claims be allowed. No fees are believed due at this time. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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